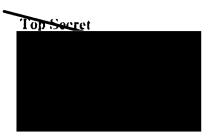


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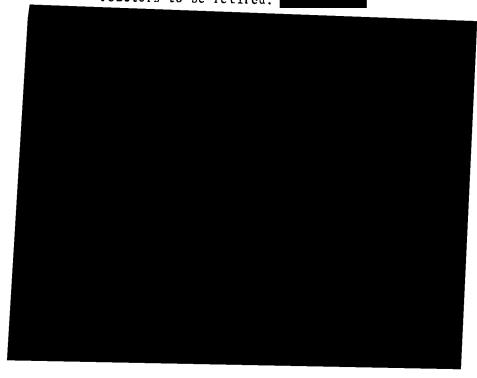
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A laser isotope separation process is being studied to accomplish this goal and, if successful, may allow France to obtain greater quantities of weapon-grade plutonium for anticipated increases in stategic and tactical nuclear weapons and also allow uneconomical "production" reactors to be retired.



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## OFFICE OF SCIENTIFIC AND WEAPONS RESEARCH

## Science and Weapons Daily Review

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FRANCE: WEAPON-GRADE PLUTONIUM FROM SPENT-POWER REACTOR FUEL

Perhaps in anticipation of increased weapons requirements, France is working to develop a laser isotope separation process to obtain weapon-grade plutonium from the spent fuel of commercial power reactors. If successful, it may be capable of producing considerably more weapon-grade plutonium than it now obtains by operating "production" reactors. France could exercise the option of retiring these reactors for economic reasons.

President Mitterrand and
Premier Mauroy recently stated that France intends to
modernize its strategic deterrent and its tactical
nuclear arms. This may require additional plutonium
for the military. Normally, weapon-grade plutonium is
produced by irradiation of natural uranium in a
production reactor for a short period. It is then
removed and reprocessed to extract the plutonium.

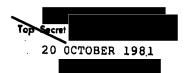
Commercial light-water power reactors are the predominant type now in operation and coming on-line in France. The La Hague commercial fuel reprocessing plant is processing spent fuel from those reactors and will continue to accumulate extracted plutonium. This plutonium, however, is only satisfactory for use as fast-breeder reactor fuel or for recycling in light-water reactors; it is not desirable for use in



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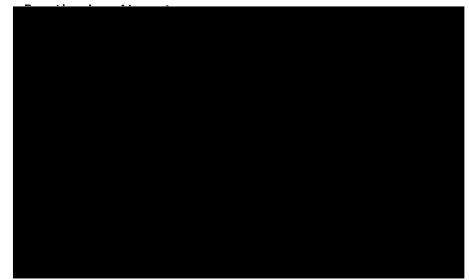






modern nuclear warheads. A plutonium laser isotope separation process could upgrade some of this plutonium, which contains about 65 percent plutonium-239, to weapon-grade plutonium containing about 93 percent of the isotope.







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